

Appl. No.: 10/796,656
Amdt. dated 07/24/2006
Reply to Office action of March 22, 2006

REMARKS/ARGUMENTS

Claims 1-13 are pending. Applicants have amended claim 1 to recite "wherein the composition comprises 10 ppm or less halogen impurity and 100 ppb or less metallic impurity wherein boron is counted in the metallic impurity." Applicants have also amended claim 9 to recite "100 ppb or less metallic impurity." These amendments are supported by the original claims and specification, including page 15 of the specification. Applicants have also amended a paragraph of the specification to correct obvious typographical errors. Applicants respectfully request entry of these amendments.

Claims 1-4 and 6-13 stand rejected under 35 U.S.C. § 112 ¶ 2 as indefinite. Applicants have amended claims 1 and 9 to recite "100 ppb or less metallic impurity" as was recited in the original claims. Applicants respectfully request withdrawal of this rejection.

Claims 1-4 and 6-13 stand rejected under U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,410,150 (Kurosawa, et al). The examiner alleges that Kurosawa discloses hydrolysis and condensation of methyltrimethoxysilane and tetraethoxysilane in the presence of tetraamethylammonium hydroxide and takes the position that the halogen impurity and metallic impurity levels recited in claim 1 "are property limitations that are presumed to be inherent to the composition of Kurosawa, et al., per MPEP section 2112.01, because their composition is substantially identical to applicant's composition as claimed in claim 1." Applicants respectfully traverse this rejection.

The standard for anticipation is rigorous requiring that every element of the claimed invention be disclosed by a single prior art reference. See *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed.Cir.1992); *Scripps*, 927 F.2d at 1576-77; *Lindemann Maschinenfabrik GMBH, v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed.Cir. 1984). Further, the allegedly anticipatory reference must describe the claimed invention "with sufficient precision and detail to establish that the subject matter existed in the prior art." *Verve LLC v. Crane Cams Inc.*, 65 USPQ2d 1051, 1054 (Fed. Cir. 2002). As also noted by the Federal Circuit, an anticipatory reference must "describe the applicant's

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claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." *In re Spada*, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

Kurosawa clearly fails to anticipate claims 1-4 and 6-13 because it does not disclose, explicitly or implicitly, each and every element of claims 1-4 and 6-13. Specifically, Kurosawa does not disclose that the composition comprises 10 ppm or less halogen impurity and 100 ppb or less metallic impurity, as claimed in current claims 1-4 and 6-13. Kurosawa is silent on the amount of halogen and metallic impurities that may be present in the hydrolysis and condensation product composition and the reactants. Kurosawa is also silent on the source of the tetramethylammonium hydroxide used in Reference Examples 4 and 6. As indicated on page 4 of the specification of the present application, the tetraalkylammonium hydroxide which is conventionally and commonly available contains a significant amount of metallic and halogen impurities. Because Kurosawa is silent on the amount of halogen and metallic impurities that may be present in the reactants and the composition, and because the conventionally and commonly available form of tetraalkylammonium hydroxide contains significant amounts of metallic and halogen impurities, Kurosawa does not disclose or suggest a composition comprising 10 ppm or less halogen impurity and 100 ppb or less metallic impurity. Therefore, Kurosawa does not disclose every element of the claimed invention, and is not anticipatory. Applicants respectfully request withdrawal of this rejection.

MPEP 2112.01 does not support the contention that present claims 1-4 and 6-13 are anticipated. MPEP 2112.01 indicates that when a prior art product is identical in composition to a claimed product, the prior art product presumably inherently has the same functional properties. The claim language "wherein the composition comprises 10 ppm or less halogen impurity and 100 ppb or less metallic impurity" clearly is directed to the make-up of the composition, and the claimed halogen and metallic impurity levels are statements regarding the composition rather than "property limits." Compositions comprising 10 ppm or less halogen impurity and 100 ppb or less metallic impurity have a different composition than those with greater impurity levels. As noted above, Kurosawa does not disclose or suggest a composition comprising 10 ppm or less halogen impurity and 100 ppb or less metallic impurity. Therefore, Kurosawa does not disclose every element of the claimed invention, and is not anticipatory.

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Furthermore, there are additional reasons for viewing the invention as claimed in claims 1-4 and 6-13 as patentably distinguishable over Kurosawa. Kurosawa is silent as to the metallic and halogen impurities. As shown in the attached Declaration Pursuant to Rule 132 by Yoshitaka Hamata ("Hamata Declaration"), compositions comprising more than 10 ppm halogen impurity and more than 100 ppb metallic impurity may be used to form a porous film (see Comparative Examples 1 and 2). Therefore, Kurosawa does not necessarily possess the characteristics of the claimed product.

As indicated in the specification and as evidenced by the examples in the Hamata Declaration, the invention can produce a film that has mechanical characteristics similar to those achieved with materials with high impurity levels without requiring further purification after the reaction step. The specification of the present application indicates on page 6 that the reaction of trialkylamine and dialkyl carbonate results in a trialkylammonium with reduced amounts of halogen and metallic impurities. However, as indicated on page 3 of the Hamata Declaration, the presence of halogen and metallic impurities is undesirable in semiconductors. In fact, as the Reference Examples in the Hamata Declaration show, the present invention is better able to produce films with desirable mechanical properties with low levels of impurities, making it more desirable for use with semiconductors than prior art film compositions. For this additional reason, Applicants respectfully submit that the claims are patentable over the cited prior art.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as obvious in view of the combination of Kurosawa and U.S. Patent No. 4,634,509 to Shimizu. Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim elements. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicants' disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP 2143. The

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mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of such combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP 2143.01(III).

There is no teaching in Kurosawa or Shimizu to suggest or motivate the modification or combination of references. Shimizu discloses a method for the production of an aqueous quaternary ammonium hydroxide solution of high purity to be used as a treating agent for the washing of semiconductor substrates and the development of resist films. Column 1, lines 11-14; column 3, lines 63-65; column 10, lines 18-21. Shimizu does not disclose or suggest any other use of the high purity quaternary ammonium hydroxide solution as disclosed therein, and would not lead one skilled in the art to use the high purity quaternary ammonium hydroxide as a catalyst for hydrolysis and condensation in an organic solvent.

As indicated above, Kurosawa is silent on the amount of halogen and metallic impurities that may be present in the reactants and the composition. Kurosawa does not list purity requirements for reactants or provide any indications as to desired impurity levels. Therefore, there is no motivation or suggestion in Kurosawa to use a high purity quaternary ammonium hydroxide solution as is disclosed in Shimizu. Because there is no motivation or suggestion to combine Kurosawa and Shimizu, the invention as claimed in claim 5 is not prima facie obvious in view of Kurosawa and Shimizu. Applicants respectfully request withdrawal of this rejection.

Additionally, as noted above, even if the Examiner had presented a proper prima facie obviousness rejection, the invention provides surprising results outlined in the specification and the attached declaration. In particular, the inventors have established that reducing certain impurities in the catalyst can still produce porous films with desirable mechanical properties. This evidence also weighs heavily in favor of patentability of the invention.

The examiner also objected to the title of the invention. In response, Applicants have amended the title herein consistent with the examiner's suggestion. Applicants respectfully request withdrawal of this objection.

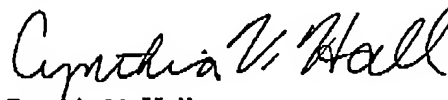
Applicants respectfully submit that all the claims are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested in due course. If any minor informalities need to be addressed, the Examiner is directed to contact the undersigned attorney

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at (404) 881-7764 or Chris Humphrey at (919) 862-2213 by telephone to facilitate prosecution of this case.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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I hereby certify that this paper is being facsimile transmitted to the US Patent and Trademark Office at facsimile number (571) 273-8300 on the date shown below.


Cynthia V. Hall

July 24, 2006
Date